



Unit measures 1"W x 1"L x 0.39"H

- Wide 4 : 1 Input Range
- High Efficiency
- Regulated Outputs
- 1600VDC Isolation
- Small Size and Low Profile
- Standard Pinouts

Model Number	Output Voltage	Output Amps	Input Range	Input mAmps (NL/FL)	Efficiency	Capacitive Load
SINGLE OUTPUT						
LCD15-24S3P3W	3.3 VDC	4	9-36 VDC	50 / 688	86%	1000uF max.
LCD15-48S3P3W		4	18-75 VDC	40 / 336	86%	1000uF max.
LCD15-24S05W	5 VDC	3	9-36 VDC	50 / 782	84%	1000uF max.
LCD15-48S05W		3	18-75 VDC	40 / 382	86%	1000uF max.
LCD15-24S12W	12 VDC	1.3	9-36 VDC	20 / 803	86%	330uF max.
LCD15-48S12W		1.3	18-75 VDC	15 / 392	86%	330uF max.
LCD15-24S15W	15 VDC	1	9-36 VDC	20 / 772	85%	220uF max.
LCD15-48S15W		1	18-75 VDC	15 / 377	87%	220uF max.

DUAL OUTPUT

LCD15-24D05W	±5 VDC	±1.5	9-36 VDC	20 / 772	85%	±500uF max.
LCD15-48D05W		±1.5	18-75 VDC	15 / 386	85%	±500uF max.
LCD15-24D12W	±12 VDC	±0.625	9-36 VDC	25 / 753	87%	±150uF max.
LCD15-48D12W		±0.625	18-75 VDC	15 / 382	86%	±150uF max.
LCD15-24D15W	±15 VDC	±0.5	9-36 VDC	25 / 744	88%	±100uF max.
LCD15-48D15W		±0.5	18-75 VDC	20 / 377	87%	±100uF max.

Options exist for the removal of the Trim Function and the reconfiguration of the Remote ON/OFF to Positive Logic (Negative Logic is standard). Please see the **Product Options Table** for Model Number information (suffixes). Simply add the suffix denoted to the end of the Model Number (i.e. LCD15-24S05W-A).



Isolated and Regulated 15 Watt Encapsulated DC/DC Converters

LCD15W series

INPUT SPECIFICATIONS

Input Voltage Ranges:	24 VDC Nominal	9-36 VDC
	48 VDC Nominal	18-75 VDC
Start Up Voltage	24V: 9VDC, 48V: 18VDC	
Shutdown Voltage	24V: 8VDC, 48V: 16VDC	
Input Voltage Variation (dv/dt)	5V/ms, max. to ETS300 part 4.4	
Max. Voltage Surge (100mS max)	24 VDC Nominal	50 VDC
	48 VDC Nominal	100 VDC
Input Reflected Ripple Current	30mA, pk-pk Nom I/P, FL	

OUTPUT SPECIFICATIONS

Voltage and Current	See Selection Chart
Minimum Load	0%
Voltage Adjust	±10%
Line Regulation (HL-LL, FL)	Single: ±0.2%; Dual: ±0.5%
Load Regulation (NL-FL)	Single: ±0.2%; Dual: ±1%
Start Up Time (Power or RC)	30mS, max.
Temperature Coefficient	±0.02%/°C, max.
Ripple/Noise (Note)	75~100mV, pk-pk
Voltage accuracy (FL, Nom I/P)	±1%
Transient Response Recovery	
25% Load Step Change	250 microSeconds
Short Circuit Protection	Hiccup, self-recovering
Overvoltage Protection Threshold: (Clamp)	
3.3V Output	3.7-5.4Volts
5V Output	5.6-7.0Volts
12V Output	13.8-19.6Volts
15V Output	16.8-20.5Volts
Overload Protection	150% of Full Load (FL), typ.

PHYSICAL SPECIFICATIONS

Case Material	Nickel-coated Copper
Base Material	FR4 PCB
Potting Material	Epoxy (UL94-V0)
Size	1"W x 1"L x 0.39"H
	(25.4 x 25.4 x 9.9mm)
Weight	0.53 oz (15g)

* These are stress ratings. Exposure of the devices to any of these conditions may adversely affect long term reliability. Proper operation under conditions other than the standard operating conditions is neither warranted nor implied.

GENERAL SPECIFICATIONS

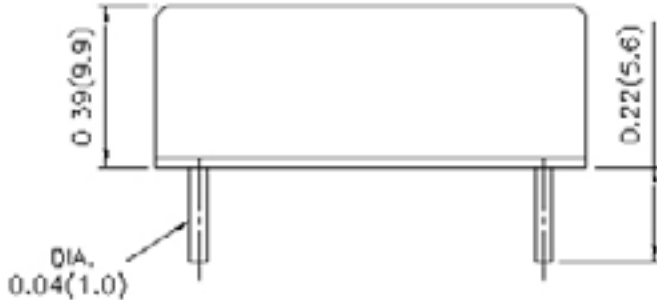
On/Off Control	Negative Logic (Ref to - Input) is standard. See Product Options Table for options and Model Numbers
	ON = Short or 0V < Vr < 1.2V
	OFF = Open or 3V < Vr < 12V
	Positive Logic: ON = Open or 3V < Vr < 12V
	OFF = Short or 0V < Vr < 1.2V
Input-Out Isolation	1600VDC
In/Out Capacitance	1000 pF, max,
Isolation Resistance	100 M Ohms
Efficiency	See Selection Chart
Switching Frequency	400Khz

ENVIRONMENTAL SPECIFICATIONS

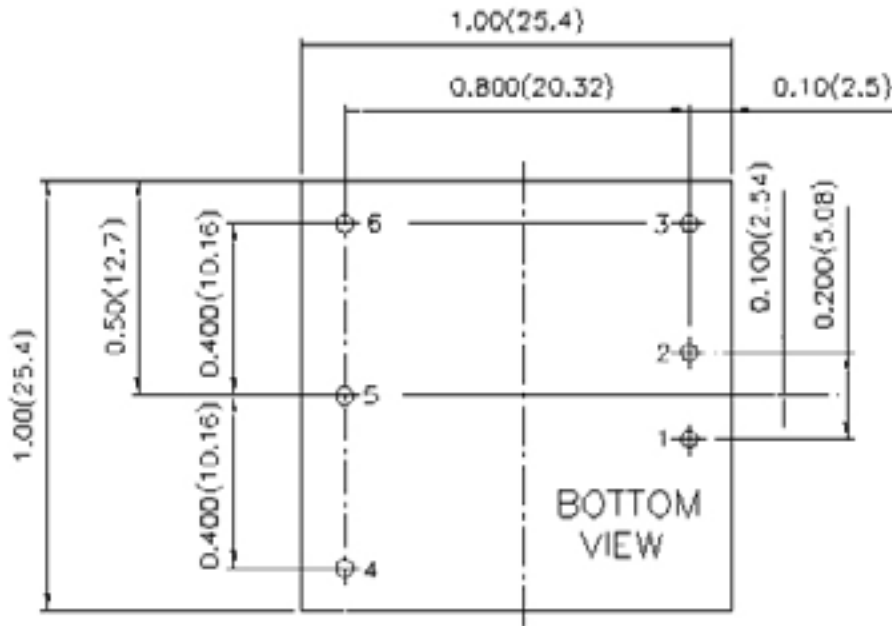
Oper. Temperature	-40 to +85°C (see derate)
Maximum Case Temperature	105°C
Storage Temperature	-55 to +125°C *
Thermal Impedance	Convection: 18.2°C/Watt
	With Heatsink: 15.8°C/Watt
Relative Humidity	5-95%
Thermal Shock	MIL-STD-810F
Vibration	10-55Hz, 10G, 3 minutes period, 30 minutes along X, Y and Z axes
EMI	EN55022A (See Class B Filter)
ESD	EN61000-4-2 Criteria A
Radiated Immunity	EN61000-4-3 Criteria A
EFT	EN61000-4-4 Criteria B
Surge (Using 220uF/100V, ESR 48MΩ cap)	
	EN61000-4-5 Criteria B
Conducted Immunity	EN61000-4-6 Criteria A
MTBF	
BELLCORE TR-NWT-000322 Case 1: 50% Stress, Temp. @ 40°C	1.330 Mhrs
MIL-HDBK-217F TA=25°C FL, Ground Benign, Controlled Environment	563 KHrs

All specifications are typical at nominal input, full load, and 25DegC unless otherwise noted

MECHANICAL DIMENSIONS



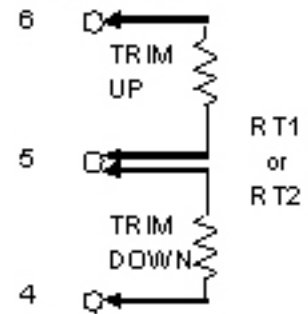
PIN CONNECTIONS		
PIN	SINGLE	DUAL
1	+ INPUT	+ INPUT
2	- INPUT	- INPUT
3	ON/OFF	ON/OFF
4	+ VOUT	+ VOUT
5	TRIM	COMMON
6	- VOUT	- VOUT



- All dimensions in inches (mm)
Tolerance X.XX ± 0.02 (X.X ± 0.05)
X.XXX ± 0.01 (X.XX ± 0.25)
- Pin pitch tolerance ± 0.01 (0.25)
- Pin dimension tolerance ± 0.004 (0.1)

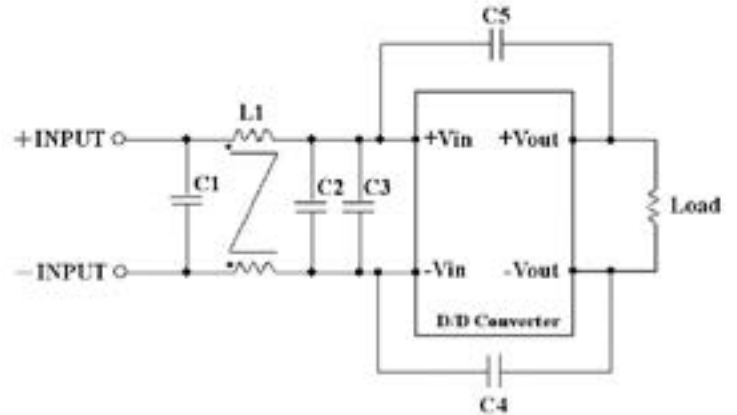
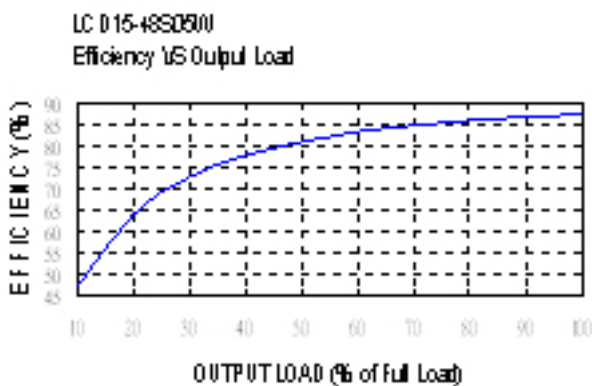
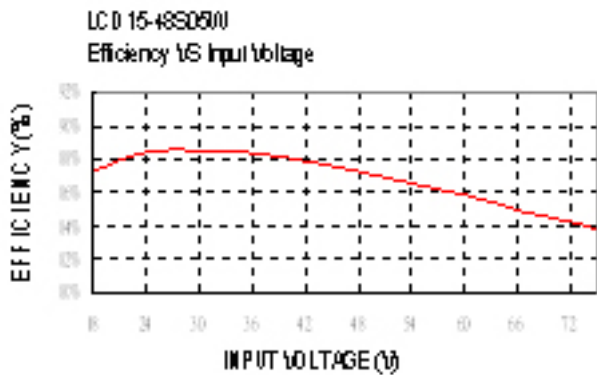
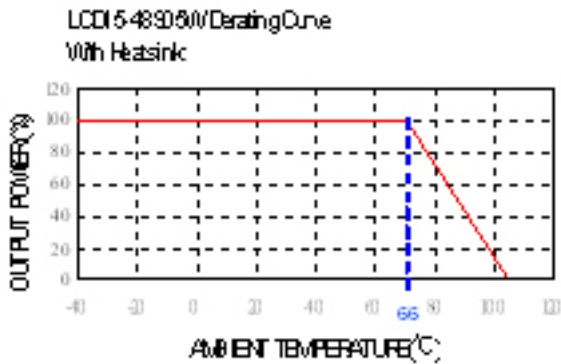
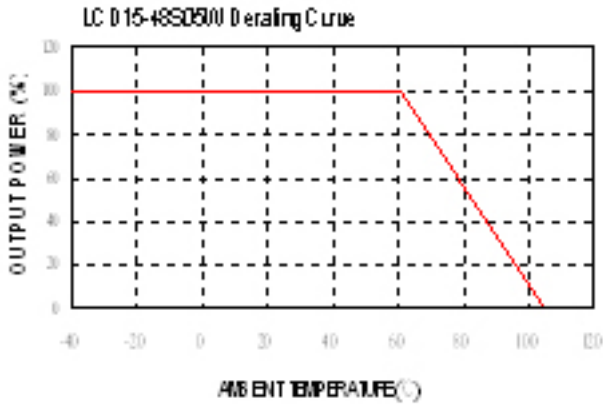
Option	Suffix
Negative remote ON/OFF(Standard)	
Positive remote ON/OFF	-A
without ON/OFF pin	-B
negative remote ON/OFF without TRIM pin	-C
without ON/OFF&TRIM pin	-D
positive remote ON/OFF without TRIM pin	-E

Output can be externally trimmed by using the method shown below.



Single Outputs Only

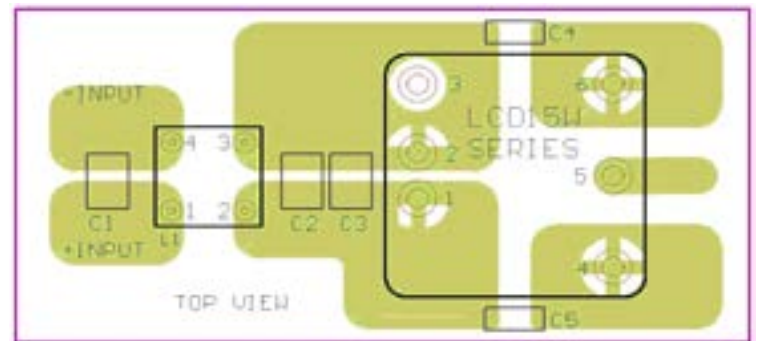
CURVES & FILTERS



Recommended Filter for EN55022 Class B Compliance.

The components used in the above figure, together with the manufacturers' part numbers for these components are as follows

	C1	C2	C3	C4 & C5	L1
LCD15-24xxxV	5.8uF/50V 1012 MLCC	0.0uF/50V 1812 MLCC	N/A	470pF/2KV 1808 MLCC	325uH Common Choke PMT-050
LCD15-48xxxV	2.2uF/100 V 1812 MLCC	2.2uF/100V 1812 MLCC	2.2uF/100V 1812 MLCC	470pF/2KV 1808 MLCC	520uH Common Choke PMT-019



Recommended EN55022 Class B Filter Circuit Layout